

Amendment/Response

Reply to Office Action of December 31, 2003

REMARKS/DISCUSSION OF ISSUES

The Examiner's approval of the changes to the drawings submitted in response to the prior Office Action has been noted. Enclosed herewith is a communication to the Official Draftsperson requesting that, subject to the approval of the Examiner in charge, the enclosed drawings, which have been corrected in the manner approved by the Examiner, be substituted for those presently on file.

Claims 1-11 are currently pending in the instant application, and have been rejected under 35 U.S.C. 102 (b) as being anticipated by Applicant's admitted prior art (Figs. 1A, 2A, and 2B) in view of Ho et al., U.S. Patent No. 6,512,502 and Vanderwerf, U.S. Patent No. 5,995,284. This rejection is, respectfully, traversed.

It is the position of the Official Action that Applicant's admitted prior art discloses the invention except for explicit teachings of the method steps of: "said turning prism being spaced from contact with said polarizing beam splitter"; and "totally internally reflecting said P component in said polarizing beam splitter and said S component in said turning prism". The Official Action contentions relating to the Ho et al. reference, U.S. Patent No. 6,512,502, "LIGHTVALVE PROJECTION SYSTEM IN WHICH RED, GREEN, AND BLUE IMAGE SUBPIXELS ARE PROJECTED FROM TWO LIGHT VALVES AND RECOMBINED USING TOTAL REFLECTION PRISMS" are incorporated by reference as set forth in the prior Official Action of July 14, 2003, except for the two above-referenced method steps. It is contended that the Ho et al. patent discloses a first air gap between parallel, opposing surfaces of beam splitter 300b and a prism 300c as illustrated in Fig. 8, and disclosed at column 7, lines 1-9. Based upon this disclosure, the previous Office Action alleged that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Applicant's admitted prior art to provide such air gaps.

Applicant, in response to this rejection, explained that in the cited Ho et al. reference there is no disclosure or teaching of minimizing the size of a light valve while maintaining efficient light collection such as by matching the dimensions of the input beam "waist". Applicant's invention achieves TIR by providing air gaps between opposing surfaces of the

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optical components, or by joining the surfaces with low refractive index optical cement, and in this manner results in a polarization conversion which increases the geometrical extent by no more than a factor of 2, which is a theoretical limit. Because the Ho et al. patent contains no disclosure or teachings addressing this problem, but merely utilizes somewhat similar components for a different function, the force of logic compels the conclusion that a prior art reference which is silent as to the existence of a problem, cannot teach its solution.

In the instant Official Action D. F. Vanderwerf, U.S. Patent No. 5,995,285 “, “POLARIZED ILLUMINATION SYSTEM FOR LCD PROJECTOR” has been added to the combination of the admitted prior art and Ho et al. reference. Vanderwerf is cited as disclosing a turning prism (88 or 90 in Fig. 12) spaced from contact with a polarizing beam splitter, and wherein said P component is totally internally reflected in said polarizing beam splitter (Fig. 2) and said S component is totally internally reflected in said turning prism (Fig. 12). Accordingly, the Official Action contends that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Applicant’s admitted prior art in view of Ho et al. and Vanderwerf.

It is respectfully submitted that it is well known that a rejection under 35 U.S. C. 102(b), anticipation, requires the disclosure in a single prior art reference of each element of the claim under consideration *W. L. Gore & Assocs. v. Garlock, Inc.* 220 U.S. P. Q. 303, 313 (Fed. Cir. 1983). When more than one reference is required to establish unpatentability of the claimed invention, anticipation under §102 cannot be found. *Continental Can Co. U.S.A. v. Monsanto Co.* 948 F.2d 1264, 20 U.S. P. Q.2d 1746, 1748 (Fed. Cir. 1991). Here the Official Action clearly acknowledges that no single prior art reference discloses each and every element of any of the claims under consideration. Accordingly, it is respectfully submitted that the Official Action has not established a prima facie case of anticipation under 35 U.S.C. 102 (b).

Assuming, arguendo, that this rejection had been made under 35 U.S. C. 103, it is not enough that references might be capable of being combined, but in order to establish a prima facie case of “obviousness” under 35 U.S.C. 103, some objective teaching in the cited prior art, or knowledge generally available to one ordinary skill in the art, must be shown that would lead

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such a person to combine the relevant teachings of the references. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). While there are elements of Applicant's invention which are similar to components of the Ho et al. reference and the Vanderwerf reference, such similarity of components alone is not an objective teaching in the cited prior art that would lead one skilled in the art to combine their teachings in the manner of the present invention. As previously discussed, the Ho et al. reference contains no disclosure or teaching addressing the attainment of TIR by providing air gaps between opposing surfaces of the optical components, or by joining the surfaces with low refractive index optical cement, which, in combination with the other steps, results in a polarization conversion which increases the geometrical extent by no more than a factor of 2, the theoretical limit. The Vanderwerf patent, while also disclosing components similar to certain elements of Applicant's invention, teaches that the adjacent and spatially separated collimated light beams enter a novel micro-prismatic spatial integrator cell 22 where they are spatially integrated and exit as a single collimated polarized beam (column 4, lines 6-13).

It is respectfully submitted that even if the combination of bits and pieces of the prior art were assembled in the manner that the Official Action contends to have been obvious to one skilled in the art, the result still does not include the step of the half wave retarder being spaced from contact with the polarized beam splitter, an element of independent Claim 1 and the claims depending therefrom. While each of the secondary references, Ho et al. and Vanderwerf, disclose components which are similar to elements of Applicant's invention, there is no objective teaching in the cited prior art that would lead one skilled in the art to combine the relevant teachings of these references. The Ho et al. invention does not even address the problem solved by Applicant's invention, and the Vanderwerf invention requires a specific micropismatic spatial integrator cell in order to attain its objective.

It is respectfully submitted that there is no objective teaching in the cited prior art that would lead one skilled in the art to combining the teachings of the references in the manner set forth by the Official Action. A combination of references in the manner suggested by the Official Action is evidence of prohibited hindsight reconstruction. The prior must be judged based on a full and fair consideration of what that art teaches, not by using Applicant's invention

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as a blueprint for gathering various bits and pieces of unrelated prior art in an attempt to reconstruct Applicant's invention. Accordingly, it is respectfully submitted that the Official Action has succumbed to the lure of prohibited hindsight reconstruction. Reconsideration is requested.

In view of the foregoing, Applicant respectfully request that the Examiner withdraw the rejection of record, allow all pending claims, and find the application in condition for allowance. If any points remain in issue that may be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact Mr. Eric M. Bram (not the undersigned) at (914) 333-9635.

Respectfully submitted,



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